Effects of Cervical Versus Thoracic Manipulation on Cervical Range of Motion, Pain Rating, and Neck Disability Index Scores

Rebecca Achilles, Kirsten Lyon, Bri Raigoza, Kerby Rice,*
Chricket Short Niehues
Faculty: Michael A. Rogers
Department of Physical Therapy, College of Health Professions

Neck pain is the cause of approximately 25% of patient visits to outpatient physical therapy annually. Complaints include headaches, neck pain, decreased range of motion, and decreased quality of life. This study looked at two different, yet common treatments for neck pain. Thirty subjects with a history of neck pain and/or headaches within the past three months were recruited and randomly divided into three equal groups (n=10). One group received cervical manipulation, another group received thoracic manipulation, and the final group served as the control and did not receive a treatment. Manipulation is defined as a high-velocity thrust at the end range of motion. Cervical range of motion (ROM), numerical pain rating scale (NPRS), and neck disability index scores (NDI) were measured prior to and immediately following each respective intervention at baseline (week 0), week 2, and week 4. We hypothesized that cervical manipulation treatment would have the greatest effect on ROM, pain, and NDI scores. Our study demonstrated no significant difference between cervical manipulation, thoracic manipulation, and control groups in regards to the NDI, NPRS, and cervical ROM. Trends towards improvement were displayed in the cervical group for flexion and bilateral rotation and thoracic group for bilateral rotation. NPRS and NDI scores also demonstrated trends toward improvement with the cervical group showing the most improvement for both scores. With the trends toward improvement, when treating patients with mechanical neck pain one can assume that either cervical or thoracic manipulation could be beneficial not as the sole treatment but as an adjunct to an overall intervention. However, these results can only be generalized to populations that fit the inclusion and exclusion criteria used in this study.